

contains the limitations of previous Claims 44 and 50. New independent Claim 78 contains limitations of previous Claims 58 and 59. New independent Claim 80 contains the limitations of previous Claims 58 and 60. Support for new dependent Claims 62-69 is found in original Claims 48, 49, 54, 45, 46, 47, 56 and 57. Support for new dependent Claims 71-78 are found in previous Claims 51, 52, 53, 45, 46, 55, 56 and 57. No new matter is added.

#### REQUEST FOR RECONSIDERATION

Applicants thank Examiner Deo for the helpful and courteous discussion of January 27, 2003. During the discussion, Applicants' U.S. representative suggested submission of information showing the superiority of the claimed composition as a way to demonstrate the unobviousness of the claimed invention. The Examiner noted that any new information must be submitted in the form of a properly executed Declaration.

Claims 61, 70, 79 and 80 are new independent claims. Support for the new independent claims is found in the previous claims. Since the new independent claims contain only limitations present in the previous claims, no new issues for consideration have been raised. The new dependent claims that contain limitations of the previously active dependent claims.

A Declaration, executed by one of the named inventors, is attached herewith. In Experiment 1 of the Declaration three slurries are prepared, (1) a slurry according to the claimed invention (JSR method), (2) a slurry according to the method described in the prior art (Ronay) and (3) a slurry of alumina. A side-by-side comparison of the three slurries shows that the invention slurry provides a polishing rate nearly twice that achievable with alumina particles and nearly 10 times that achievable with the prior art slurry (3,900 Å/min vs. 1,900 Å/min and 410 Å/min respectively). Additionally, the invention slurry is able to

provide an improved surface as reflected in the number of scratches. The number of scratches is nearly 80% lower for the claimed invention in comparison to the Ronay slurry (30 pts vs. 200 pts). As is stated in paragraph 5 on page 3 of the Declaration, the polishing rate and number of scratches were measured under the same conditions for all samples.

As stated in paragraph 8 on page 4 of the Declaration:

"The polishing rate observed for the presently claimed composition should not be expected from the disclosure of the Ronay specification which discloses an inhibitory effect for a polishing rate when a polymer particle and an inorganic particle are combined in a polishing slurry."

Experiment 1 has therefore shown that the claimed invention provides a significantly superior polishing rate and a reduced number of scratches. As stated in the Declaration, the improvement in the polishing rate should not be expected from the disclosure of Ronay.

The Declaration also provides Experiment 2 which utilizes a styrene polymer particle (R1). The polymer particle (R1) is used in the Ronay slurry. The invention slurry (JSR method) contains a polymer (polystyrene) particle that has carboxyl groups and sulfuric ester groups on its surface.

Experiment 2 gives a comparison of the claimed method with the methods of Ronay and alumina particles and shows that the presently claimed method provides a significantly superior polishing rate and scratching performance (see the Table on page 5 of the Declaration). This comparison shows that Ronay's alternate embodiment where a polymer particle is included in the prior art slurry is unable to provide the polishing performance of the claimed invention.

Applicants have therefore demonstrated that the claimed invention is able to provide significantly superior performance in a side-by-side comparison of the prior art. Applicants submit that the Declaration provides objective evidence sufficient to establish the non-

obviousness of the claimed invention in view of the prior art cited by the Examiner.

Applicants respectfully request the withdrawal of the rejection under 35 U.S.C. §103(a).

Applicants further submit that the presently claimed invention is not obvious in view of Ronay in view of the differences between the claimed invention and the disclosure of Ronay. The polyelectrolyte materials of Ronay are disclosed as:

“Unlike most uncharged polymers, polyelectrolytes usually are soluble in polar solvents. e.g., water.” (column 5, lines 3-5).

In Example 2 of Ronay where the prior art slurry is prepared, it is disclosed that the polyelectrolyte is added to the prior art slurry as a 65 wt% solution. Therefore, the poly(acrylic acid) of Ronay is soluble in water.

The particles of Ronay are described as inorganic (not polymer) particles whereon a polyelectrolyte is adsorbed (see, for example, column 3, lines 38-39). Ronay describes in an alternative embodiment that a non-soluble polymer can be employed in place of, or in addition to, the polyelectrolyte coated abrasive particles. The polymers disclosed as candidates for the non-water-soluble polymer include polystyrene, butadiene rubbers, and water dispersible polyurethane powders, none of which are water-soluble. Further, none of these materials contain a hydrophilic functional group (column 7, lines 62-64). In order to impart hydrophilic behavior to the non-water-soluble polymers, a surfactant may be added (column 7, lines 65-67). Example 2 of the Declaration provides a comparison of the claimed invention with a composition that contains a particulate polymer not having the presently claimed functional groups.

Applicants submit the amendment to the claims places all claims in condition for allowance. Applicants respectfully request the withdrawal of the rejections and the passage of all now-pending claims to Issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Norman F. Oblon  
Attorney of Record  
Registration No. 24,618

Stefan U. Koschmieder, Ph.D.  
Registration No. 50,238



**22850**

(703) 413-3000  
Fax #: (703)413-2220  
NFO/SUK/cja  
I:\atty\suk\00397632-am.wpd

0039-7632-0X

**Marked-Up Copy**

Serial No: 09/531,163

Amendment Filed Herewith

IN THE CLAIMS

Claims 61-80 (New).